



MOTOTRBO™

Frequently Asked Questions

This document will be updated on a regular basis and posted to MOL. Please refer to MOL for the latest version of frequently asked questions.

Basic Platform Questions

What is “MOTOTRBO?”

Who is the target customer?

How much and what type of industry research was put into developing this system?

Why MOTOTRBO? (or What are the key benefits? Why should these customers care? Why would a customer want to “overhaul” their existing system for this?)

Where does MOTOTRBO fit in Motorola’s portfolio of products?

Why should dealers want to sell this? What’s in it for them?

Basic Product Questions

Is MOTOTRBO a series of radios, or simply a single radio?

How is the name MOTOTRBO different from XPR™?

What exactly is available in the first release of MOTOTRBO (released in February 2007)?

What exactly is available in the latest release of MOTOTRBO (released in July, 2007)?

***What exactly is available in the latest release of MOTOTRBO (released in December, 2007)?**

Does MOTOTRBO replace a current Motorola model?

How easily can current analog customers migrate to MOTOTRBO?

What features are available in analog mode of the MOTOTRBO radios?

How does this compare to what is in my Professional Series analog radios today?

What features are available in digital mode of the MOTOTRBO radios?

How does this compare to what is in my Professional Series analog radios today?

***Can a MOTOTRBO subscriber programmed with a digital channel, talk to an analog channel on the same frequency?**



Do the MOTOTRBO radios require new programming software (CPS) and with what versions of Windows®, does the programming software work?

What is the warranty for the MOTOTRBO portfolio?

**Can CES equipment interface with the GPS modem in the XPR™ 4350/4550/6350/6550?
Will CES equipment work on the MOTOTRBO system in analog or digital mode?**

Will my current Professional Series accessories (HT series, CDM series) work on the MOTOTRBO platform? Will there be a dongle that allows me to re-use my existing Professional Series accessories?

**Each time you introduce a new radio, it seems like I have to buy all new accessories.
Why is there a new accessory platform? What are the benefits of this accessory platform?**

Is the radio intrinsically safe?

***I see that the radio has “Basic Privacy,” what does that mean?**

Will the MC-series desksets work on the MOTOTRBO platform?

What duplexer configurations are available with the XPR 8300 repeaters?

Does the XPR 8300 work with voting systems or receivers?

***Is there a desktop housing available for the XPR 8300 repeater?**

**I heard you saying that MOTOTRBO pricing is “comparable” to similar analog solutions.
What does that mean?**

***If my MOTOTRBO repeater goes down, do I lose both digital time slots? Will my subscribers work in digital in Talkaround mode?**

***Is Digital audio better than Analog audio?**

***If a channel is busy, what happens to a telemetry action?**

***Can you create an audit trail for telemetry through the interface server?**

***Can I poll the state of a contact?**

***Telemetry & voice, can I do both?**

***Can you send telemetry commands per Talk Group?**

***Is a telemetry acknowledgement tone customizable?**

What is the lifespan for a MOTOTRBO system?



General Data Applications Questions

What is the data rate for the MOTOTRBO system?

I'd like to configure my system so that all data is sent on one channel slot of my repeater and all voice traffic is automatically sent on the other slot. Can I do this?

Location Tracking Services

How do I order the Location Services tracking application?

How are my maps for the location tracking services application ordered?

I cannot find the serial number needed to order my customer map data and licenses.

I received the link via email to download my map data, but the link does not work.

Can I use a custom map?

***Can I order more than 9 counties or 23 contiguous Census Division Areas of map data?**

What happens if my radio is configured for automatic location updates and the channel is busy at the time my radio is supposed to transmit an update?

What happens if my radio is configured for automatic location updates on channel 1 and I am currently on channel 2?

What happens if I select a channel that is not linked back to the location tracking services application?

If a radio user leaves the coverage area of the system, will their GPS location coordinates be stored and transmitted once they return to the coverage area?

***If my MOTOTRBO repeater goes down, does GPS still work?**

Text Messaging Services

How do I order the Text Messaging Services Application?

I cannot find the serial number needed to order my licenses.

I would like for my radio users to be able to send emails to external devices, how do I set up the application to enable this service?

What is the difference between the Text Messaging Service Lite Client application that is included in the Location Services application and the Text Messaging Services Full Client application?

How many contacts can I store at the dispatcher station in the Text Messaging server?



Application Developer Program

Who can I speak with to find out more about MOTOTRBO's Application Developer Program?

How do I become a Motorola Professional Radio Application Developer or a Motorola Professional Radio Application Provider for MOTOTRBO?

Where do I download the MOTOTRBO Application Developer Kits (ADKs)?

I have a technical question / problem and need to speak to someone. Who do I contact?

If I am an Application Developer or an Application Provider for PROIS, does that mean I have a license agreement for MOTOTRBO or vice versa?

I would like to develop and test my application with MOTOTRBO radios. How do I proceed to acquire these products?

Where can I find software tools or development kits to help me develop my application?

Future Roadmap

What are the roll-out plans for the various models, bands, etc?

Is remote mount capability available on the XPR™ series mobiles?

Is telephone interconnect or DTMF signaling capability available on the MOTOTRBO platform?

**I noticed there was an Ethernet connector on the back of the repeater.
What is the purpose of this connector?**

What are your plans for a high power (100W) repeater or 100W power amplifier?

What are your plans for a digital trunking solution?

Does this mean the end of analog system development/offering from Motorola?

***What are your Multi-Site plans? Will my repeater be upgradeable?**

Technology/Standards/Regulatory Environment

What standard is MOTOTRBO based on?

Why TDMA and how does TDMA differ from FDMA?

Are there any health issues with the TDMA technology?

Is digital audio really better than analog audio?

Is MOTOTRBO compatible with P25 technology/systems?



Competition

Who/what are MOTOTRBO's biggest competitors?

I was over in Kenwood/ICOM's booth at IWCE and heard them talking about their 6.25 "true" FDMA solution, including benefits over TDMA alternatives. What's the difference? Why is yours going to come out the winner?

There was an article in *MRT* magazine that stated ICOM and Kenwood chose an FDMA solution because it leveraged existing FM radio hardware and also FDMA required no infrastructure to operate. How does the MOTOTRBO platform compete with those claims?

Training

What training is available for my salespeople?

What training is available for my system and service technicians?

Licensing Requirements

My customer is currently operating analog radios on a 25 kHz or 12.5 kHz channel. They would like to purchase new MOTOTRBO radios and operate them in analog mode.

***My customer is currently operating analog radios on a 25 kHz channel. They would like to purchase new MOTOTRBO radios and operate them in digital mode.**

***My customer is currently operating analog radios on a 12.5 kHz channel. They would like to purchase new MOTOTRBO radios and operate them in digital mode.**

My customer would like to take advantage of TDMA technology and operate 2 voice paths over one repeater channel. Are there any additional licensing requirements to support this operation?

***My customer would like to use the Location Services and Text Messaging applications. Are there any additional licensing requirements to support this operation?**



Basic Platform Questions

What is “MOTOTRBO?”

MOTOTRBO is Motorola’s first digital two-way radio system specifically designed to meet the requirements of professional organizations—including transportation, education, construction, manufacturing, private security, smaller municipalities and public service).

With MOTOTRBO businesses get the benefits of two-way radio combined with digital technology they need to stay competitive:

- enhanced basic features and functionality,
- exceptional voice quality,
- integrated applications including GPS-based location tracking and text messaging,
- and increased capacity, doubling the number of users that can be supported through a repeater using existing radio channels.

All leading to improved workforce productivity, operational efficiency and increased mobility while maintaining constant connectivity with the workforce.

MOTOTRBO is a registered trademark of Motorola. It is pronounced “Moto—turbo” and is spelled as one word, with all capital letters.

Who is the target customer?

MOTOTRBO was designed to meet the “operations critical” needs of professional industries including transportation, education, construction, manufacturing, private security, smaller municipalities and public works entities—each facing the need for improved workforce productivity, operational efficiency and increased mobility while maintaining constant connectivity with the workforce.

MOTOTRBO meets the expanding wireless communication needs of these businesses, especially those requiring reliable business critical communications combined with the higher performance capabilities that digital technology can provide.

How much and what type of industry research was put into developing this system?

Motorola spent a significant amount of time developing MOTOTRBO, working with our customers, dealers and businesses in the professional market to research communications requirements and needs.

- The dealer community was especially engaged in the research and development process for MOTOTRBO. Our dealers are experts in selling communications systems, interpreting the needs of end-users and evaluating how to bring new technologies and capabilities to customers in a seamless fashion.

Based on this feedback, we learned that professional tier customers wanted/needed the following:

- spectral efficiency
- better basics
- enhanced features
- Integrated applications to improve operational efficiency
- a comfortable migration path from analog to digital

Motorola developed MOTOTRBO to provide businesses with one of the best of two-way radios, combined with digital technology they need to stay competitive:

- enhanced basic features and functionality,
- exceptional voice quality,
- integrated applications including GPS-based location tracking and text messaging,
- and increased capacity, doubling the number of users that can be supported through a repeater using existing radio channels.



Why MOTOTRBO? (What are the key benefits? Why should these customers care? Why would a customer want to “overhaul” their existing system for this?)

MOTOTRBO utilizes TDMA digital technology to improve basic functionality and system performance, while bringing new applications into the world of two-way radio, including:

- Increased system capacity—MOTOTRBO improves spectrum efficiency by doubling the number of users businesses can support on a single licensed 12.5kHz repeater channel and enabling more information to be transmitted on existing frequencies.
- Up to 50% reduction in repeater costs compared with equivalent analog systems, because a single repeater provides the benefits of two analog repeaters.
- Improved audio quality at the edge of coverage compared to analog radios.
- Longer talk time with up to 40% longer battery life than analog radios.
- Improved background noise suppression.
- Enhanced call signaling and control capabilities

In addition, organizations have access to integrated data applications such as Global Positioning System (GPS)-based location tracking, text messaging and other IP data applications.

Furthermore, additional applications can be customized to meet your customer needs through the Application Developer's Program. Please see Motorola Developer Network site: MOTODEV (<http://developer.motorola.com/products/twowayradios/mototrbo>) for more information.

MOTOTRBO is also backwards compatible supporting both analog and digital modes, providing a gradual, manageable and easy migration from an analog to digital system.

Where does MOTOTRBO fit in Motorola's portfolio of products?

MOTOTRBO continues Motorola's history of delivering innovations that leverage standards-based technology to help businesses grow and better serve our customers.

Motorola has been leading the way in digital two-way radio communications for more than two decades, including the launches of ASTRO® 25 (compliant to TIA Project 25 standard) and Dimetra IP (compliant to ETSI TETRA standard), the industry's first mission critical digital two-way radio systems for large public safety organizations. (Motorola's first P25 system launched in 1996.)

Adding to its portfolio of digital two-way radio solutions in 2005, Motorola launched the DTR Series for retail businesses needing communications that enhance productivity, but don't require licensed spectrum (select countries).

With the introduction of MOTOTRBO for the professional tier, Motorola will have the industry's most comprehensive portfolio of digital radio solutions.

Why should dealers want to sell this? What's in it for them?

The MOTOTRBO system provides dealers with the ability to sell higher-value communications systems to meet end-user needs. The high-value offering of MOTOTRBO will create excitement, generating new opportunities for dealers to strengthen existing end user relationships as well as grow their business by attracting new customers with a compelling solution package.

The MOTOTRBO system enables dealers to tailor a solution to meet the specific needs of their customers. By providing system design, implementation and ongoing support, dealers will have the ability to maximize revenues and build long-term customer relationships.



Basic Product Questions

Is MOTOTRBO a series of radios, or simply a single radio?

MOTOTRBO provides a complete dual mode (analog and digital) system including repeater, mobile and portable units, data applications, accessories and services making it possible for professional businesses to easily and affordably customize a MOTOTRBO solution to meet specific needs and migrate to digital at their own pace.

How is the name MOTOTRBO different from XPR™?

MOTOTRBO is the platform name for the complete system which includes repeater, mobile and portable units, along with data applications, accessories and services. XPR is the alphanumeric name for each subscriber and repeater product in the MOTOTRBO portfolio.

What exactly is available in the first release of MOTOTRBO (released in February 2007)?

MOTOTRBO provides a complete dual mode (analog and digital) system including repeater, mobile and portable units, data applications, accessories and services. The following models will be available in Release 1.0

- XPR 6500—Display Portable UHF (403-470 MHz) 1-4W
- XPR 6550—Display Portable with GPS UHF (403-470 MHz) 1-4W
- XPR 6300—Non-display Portable UHF (403-470 MHz) 1-4W
- XPR 4500—Display Mobile UHF (403-470 MHz) 25-40W
- XPR 4550—Display Mobile with GPS UHF (403-470 MHz) 25-40W
- XPR 4300—Numeric Display Mobile UHF (403-470 MHz) 1-25W
- XPR 8300—Repeater UHF (403-470 MHz) 25-40W

For the latest list of accessories, please see the product brochure that was provided in your launch kit or is available through Print on Demand.

- MOTOTRBO Location Services Application
- MOTOTRBO Text Messaging Services Application

What exactly is available in the latest release of MOTOTRBO (released in July 2007)?

Motorola expanded the MOTOTRBO portfolio to include VHF and also to add UHF models to complete the UHF portfolio of subscribers:

VHF Models

- XPR 6500—Display Portable VHF (136-174 MHz) 1-5W
- XPR 6550—Display Portable with GPS VHF (136-174 MHz) 1-5W
- XPR 6300—Non-display Portable VHF (136-174 MHz) 1-5W
- XPR 6350—Non-display Portable with GPS VHF (136-174 MHz) 1-5W
- XPR 4500—Display Mobile VHF (136-174 MHz) 25-45W
- XPR 4550—Display Mobile with GPS VHF (136-174 MHz) 25-45W
- XPR 8300—Repeater VHF (403-470 MHz) 25-45W

UHF Models

- XPR 6350—Non-display Portable UHF with GPS (403-470 MHz) 1-4W
- XPR 4350—Numeric Display Mobile with GPS UHF (403-470 MHz) 1-25W
- XPR 4300—Numeric Display Mobile UHF (403-470 MHz) 25-40W
- XPR 4350—Numeric Display Mobile with GPS UHF (403-470 MHz) 25-40W
- XPR 4500—Display Mobile UHF (403-470 MHz) 1-25W
- XPR 4550—Display Mobile with GPS UHF (403-470 MHz) 1-25W



What exactly is available in the latest release of MOTOTRBO (released in December, 2007)?

VHF Models

- XPR 4300—Numeric Display Mobile VHF (136-174 MHz) 1-25W
- XPR 4350—Numeric Display Mobile with GPS VHF (136-174 MHz) 1-25W
- XPR 4300—Numeric Display Mobile VHF (136-174 MHz) 25-45W
- XPR 4350—Numeric Display Mobile with GPS VHF (136-174 MHz) 25-45W
- XPR 4500—Display Mobile VHF (136-174 MHz) 1-25W
- XPR 4550—Display Mobile with GPS VHF (136-174 MHz) 1-25W

- XPR 8300—Repeater UHF (403-470 MHz) 1-25W
- XPR 8300—Repeater VHF (136-174 MHz) 1-25W

Does MOTOTRBO replace a current Motorola model?

MOTOTRBO does not replace any of our current offerings. Instead, the system augments Motorola's current digital portfolio—with the introduction of MOTOTRBO for the professional tier, Motorola will have one of the industry's most comprehensive portfolio of digital radio solutions.

How easily can current analog customers migrate to MOTOTRBO?

As a dual mode radio—analogue and digital—MOTOTRBO allows scanning between the two modes, allowing businesses to upgrade at their own pace, while leveraging their existing investment.

What features are available in analog mode of the MOTOTRBO radios? How does this compare to what is in my Professional Series analog radios today?

A detailed feature matrix comparing the MOTOTRBO radios with other Professional Series Motorola radios is available on MOL under Resource Center > Product Information > Two-Way Product Comparison.

What features are available in digital mode of the MOTOTRBO radios? How does this compare to what is in my Professional Series analog radios today?

A detailed feature matrix comparing the MOTOTRBO radios with other Professional Series Motorola radios is available on MOL under Resource Center > Product Information > Two-Way Product Comparison.

Can a MOTOTRBO subscriber programmed with a digital channel, talk to an analog channel on the same frequency?

No, MOTOTRBO subscribers programmed for digital can only talk to other MOTOTRBO subscribers programmed in digital mode.

Do the MOTOTRBO radios require new programming software (CPS) and with what versions of Windows®, does the programming software work?

- Yes, a new version of programming software is required to program all MOTOTRBO radios. The software to order is RVN5115 and is 3-year Subscription Package that includes the programming software, Air Tracer and Tuner. The CPS is compatible with Windows XP (Home and Professional Versions) and Windows 2000.
- There are plans to certify the programming software with Windows Vista at a later date.



What is the warranty for the MOTOTRBO portfolio?

- The portables and mobiles ship standard with a 2-year warranty plus 1-year Repair Service Advantage (formerly known as Express Service Plus). The 1-year Repair Service Advantage can be optioned out at the time of order if the customer prefers. Additional years of Repair Service Advantage in the US and Extended Warranty in Canada are available if the customer prefers.
- The repeater ships standard with a 2-year warranty. Additional years of Repair Service Advantage in the US and Extended Warranty in Canada are available if the customer prefers.

NOTE: Through December 31, 2007, all defective units or units requiring repair should be replaced by utilizing the 45-day Replacement Process. No labor warranty claims will be accepted.

Can CES equipment interface with the GPS modem in the XPR™ 4350/4550/6350/6550? Will CES equipment work on the MOTOTRBO system in analog or digital mode?

No, the current CES Location Tracking Application cannot interface with the integrated GPS modem in the XPR 4350/4550/6350/6550. Also, the CES equipment will not interface with the MOTOTRBO radios in digital mode. The CES equipment will work with the MOTOTRBO radios in analog mode. To run the CES GPS application in analog mode, you will need the external GPS modem even if you have a GPS-enabled MOTOTRBO radio.

Will my current Professional Series accessories (HT series, CDM series) work on the MOTOTRBO platform? Will there be a dongle that allows me to re-use my existing Professional Series accessories?

No, the MOTOTRBO platform utilizes a new and enhanced digital protocol that does not support our existing portfolio of accessories.

Each time you introduce a new radio, it seems like I have to buy all new accessories. Why is there a new accessory platform? What are the benefits of this accessory platform?

With the move to a digital platform, Motorola is able to offer many new capabilities and performance improvements in its accessory portfolio. The new accessory platform offers a number of new benefits including noise suppression, IP57 submersibility on the portable, integrated RF signaling and industry unique enhanced audio features. More detail on the accessory enhancements are available in the MOTOTRBO dealer brochure that was sent in the initial launch kit).

Is the radio intrinsically safe?

- MOTOTRBO XPR Portable series radios have been certified by FM Approvals in accordance with Canada and U.S. Codes as intrinsically safe for use in Class I, II, III, Division 1, Groups C, D, E, F, G, when properly equipped with a Motorola FM approved battery option (PMNN4069 IMPRES Li-ion, 1400 mAh, 7.2V, Submersible (IP57) Battery).
- The MOTOTRBO XPR series portables do not meet the Canadian Standards Association approvals for Class I, II, Groups A, B. We are planning to offer an approved solution for these classes at a later date.

I see that the radio has “Basic Privacy,” what does that mean?

Basic Privacy utilizes a Motorola proprietary algorithm which works together with the provisioned Privacy Key to scramble and unscramble digital transmissions. More details on Basic Privacy can be found in the MOTOTRBO System Planner found on MOL or in your CPS.



Will the MC-series desksets work on the MOTOTRBO platform?

Yes, the MC1000, MC2000 and MC2500 will work on the MOTOTRBO platform in both analog and digital modes. In analog mode, all of the MDC features that are supported on the XPR™ series mobiles and portables are supported on the applicable deskset. In digital mode, only talk and listen capabilities are supported.

What duplexer configurations are available with the XPR 8300 repeaters?

- The XPR 8300 repeater works with both the tuned and untuned duplexers. A list of specific duplexers supported is listed on the XPR 8300 price pages.
- Both the duplexers and the preselectors can only be mounted outside of the repeater. The XPR 8300 does not support internal mounting of those components. The cables required to connect the duplexer or preselector to the XPR 8300 repeater are listed in the XPR 8300 price pages.

Does the XPR 8300 work with voting systems or receivers?

The answer is dependent upon the mode in which you are utilizing MOTOTRBO....

- If you are using MOTOTRBO subscribers in analog mode with legacy analog infrastructure (GR repeaters, MTRs, etc), then the legacy voting equipment and satellite receivers will work.
- If you are using XPR 8300 MOTOTRBO repeater in analog mode, there is no accessory port capability—the satellite receivers and voting equipment will NOT work through the XPR 8300.
- If you are using the MOTOTRBO system in digital mode, there is no digital voting equipment or satellite receiver capability.

Is there a desktop housing available for the XPR 8300 repeater?

Motorola does not source a desktop housing directly, but there is a metal desktop housing enclosure available through Hammond Manufacturing. This enclosure can be purchased through one of the international distributors which can be found on the Hammond Manufacturing web site at www.hammondmfg.com. The manufacturer's part number is: RCBS1900513BK.

I heard you saying that MOTOTRBO pricing is “comparable” to similar analog solutions. What does that mean?

Motorola made an investment in the MOTOTRBO technology platform in order to bring integrated applications and advanced functionality to the professional two-way radio market.

While dealers ultimately determine specific MOTOTRBO pricing for end users (depending upon what they are including with the system, etc.), MOTOTRBO was developed to be offered at a competitive price-point compared to existing analog two-way radio solutions for professional tier customers.

We are confident that MOTOTRBO provides such enhanced functionality and operational efficiencies that end-users will want to move to digital platforms faster.

Detailed pricing on all models is available on the price pages that were included in the initial launch kit or via Print on Demand.

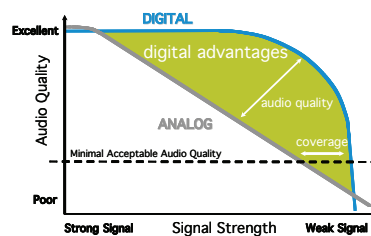


If my MOTOTRBO repeater goes down, do I lose both digital time slots? Will my subscribers work in digital in Talkaround mode?

Yes, you will lose your digital time slots, but the subscribers will operate in digital in Talkaround mode. Text Messaging will work, unit to unit, as long as they are within range of each other. Also, GPS and Text Messaging will continue to work so long as the subscribers are within range of the Application Servers (System must be using a MotoLocator Server or Text Messaging Server).

Is Digital audio better than Analog audio?

Digital audio is different from analog audio. MOTOTRBO digital audio offers performance advantages over analog audio by improving intelligibility and removing static in weak signal conditions and suppressing background noises in the transmitting party's environment. Unlike analog audio, it does not gradually fade out as signal strength declines, and, if present, adjacent or co-channel interference will sound different.



If a channel is busy, what happens to a telemetry action?

The radio will attempt to resend the command, but will timeout if the channel is busy for a long period of time.

Can you create an audit trail for telemetry through the interface server?

Yes, but this will be through a 3rd party.

Can I poll the state of a contact?

Yes.

Telemetry & voice, can I do both?

Yes, in digital mode only.

Can you send telemetry commands per Talk Group?

Yes, telemetry commands can be sent to a Group Call or a Private Call.

Is a telemetry acknowledgement tone customizable?

No.

What is the lifespan for a MOTOTRBO system?

Because of the functionality and platform design, MOTOTRBO is positioned to be used in the professional radio user marketplace and meet customer needs for a long time.

We expect MOTOTRBO to meet the average lifespan for existing professional two-way radio systems (approx. 5-7 years).



General Data Applications Question

What is the data rate for the MOTOTRBO system?

The MOTOTRBO platform supports a data rate of 9600 bps. Error correction and other necessary overhead reduce the effective data rate to ~ 2100 bps. Also, it is understood that factors such as file (transfer) size, range and concurrent usage all affect the overall data rate of the system.

I'd like to configure my system so that all data is sent on one channel slot of my repeater and all voice traffic is automatically sent on the other slot. Can I do this?

Currently, this configuration is not supported on the MOTOTRBO system. GPS updates will be attempted on the currently selected channel. When the user selects a channel, the radio "registers" with the location server on that channel. Voice activity and GPS updates will share the "selected" channel. More detail and recommendations on how to configure your Location Application, balance the load number of users, level of voice activity and cadence of automatic GPS updates is discussed in the System Planner. The System Planner is available on the MOTOTRBO Programming Software CD (RVN5115), on MOL, or can be ordered separately (6880309T12).

Location Tracking Services

How do I order the location tracking services application?

Detailed instructions on how to order the Location Tracking Services software is available in the Data Applications ordering guide, which was included on the Sales Tool CD that shipped with your launch kit.

How are my maps for the location tracking services application ordered?

Detailed instructions on how to order the Location Tracking Services software is available in the Data Applications ordering guide, which was included on the Sales Tool CD that shipped with your launch kit.

I cannot find the serial number needed to order my customer map data and licenses.

- If you ordered the Location Services application prior to May 2007, the serial number is located on the box that contained the Location Services CDs. If you no longer have the box, you will need to email MOTOTRBO@Motorola.com for assistance.
- If you ordered the Locations Services application after May 2007, the serial number is located on the Documentation and Utilities CD case. If you no longer have this CD, you will need to email MOTOTRBO@Motorola.com for assistance.

I received the link via email to download my map data, but the link does not work.

The map data must be downloaded within 7 days of receiving the email. If it is past 7 days from receiving the email, you must call the System Support Center for assistance at 1-800-422-4210.

Can I use a custom map?

The maps that are included in the standard location services application allow the customer to customize the layers of detail they would like to see on the map. If additional customization is required beyond what it is in the standardized mapping application, you will need to work directly with ESRI (our mapping vendor) and purchase a tool-kit that allows you to create your own custom map. Please note that this map will not be certified and supported by Motorola.

**Can I order more than 9 counties or 25 contiguous Census Division Areas of map data?**

Currently the application does not support detailed map data for more than 9 counties or 25 contiguous Census Division Areas.

What happens if my radio is configured for automatic location updates and the channel is busy at the time my radio is supposed to transmit an update?

The location coordinates will not be transmitted if the channel is busy and the location update will be sent at the next scheduled update. If the dispatcher needs to know the location of that user, they can send a manual location update.

What happens if my radio is configured for automatic location updates on channel 1 and I am currently on channel 2?

The location coordinates will not be transmitted if the channel is busy and the location update will be sent at the next scheduled update. If the dispatcher needs to know the location of that user, they can send a manual location update.

What happens if I select a channel that is not linked back to the location tracking services application?

If the control station attached to the Location Tracking Services server is dedicated to channel 1 and you switch your radio to channel 2, the radio will attempt to do a registration update on channel 2 and will fail because there is no server available for channel 2. Location updates will not resume until the user switches back to channel 1.

If a radio user leaves the coverage area of the system, will their GPS location coordinates be stored and transmitted once they return to the coverage area?

No, the radio has no mechanism for storing GPS coordinates when the user is not in their radio system coverage area.

If my MOTOTRBO repeater goes down, does GPS still work?

GPS and Text Messaging will continue to work so long as the subscribers are within range of the Application Servers (System must be using a MotoLocator Server or Text Messaging Server).

Text Messaging Services

How do I order the Text Messaging Services Application?

Detailed instructions on how to order the Text Messaging Services software are available in the Data Applications ordering guide, which was included on the Sales Tool CD that shipped with your launch kit.

I cannot find the serial number needed to order my licenses.

- If you ordered your Text Messaging Services application prior to May 2007, the serial number is located on the box that contained the Text Messaging CDs. If you no longer have the box, you will need to call the System Support Center for assistance at 1-800-422-4210.
- If you ordered the Text Messaging Services application after May 2007, the serial number is located on the Documentation and Utilities CD case. If you no longer have this CD, you will need to call the System Support Center for assistance at 1-800-422-4210.



I would like for my radio users to be able to send emails to external devices, how do I set up the application to enable this service?

Detailed instructions are available in the Data Applications training course. See the training section below for more information. Note that the dispatcher and radios in the system can only communicate with email-addressable devices that have been programmed into the Text Messaging Services application. This was done to protect the 2-way radio system from spam and to limit the text messages to business critical communications.

What is the difference between the Text Messaging Service Lite Client application that is included in the Location Services application and the Text Messaging Services Full Client application?

The Lite Client and Full Client offer different feature sets. The Full Client provisions for the following features which are not available on the Location Services provided Lite Client: support of address books, presence / absence indicators (availability status of the radio), the use of text groups, a draft folder for unfinished messages and email capability.

How many contacts can I store at the dispatcher station in the Text Messaging server?

The Text Messaging server can store up to 400 individual radio IDs / aliases; additionally the service can accommodate any number of email addresses within the constraints of the 2 gigabyte size limitation of the Text Messaging database server.

Application Developer Program

Who can I speak with to find out more about MOTOTRBO's Application Developer Program?

Please review the developer resources section on the Motorola Developer Network site: MOTODEV (<http://developer.motorola.com/products/twowayradios/mototrbo>). Additional questions can be sent to NAGADP@Motorola.com. Please include all relevant contact information.

How do I become a Motorola Professional Radio Application Developer or a Motorola Professional Radio Application Provider for MOTOTRBO?

Please review the developer resources section on the Motorola Developer Network site: MOTODEV (<http://developer.motorola.com/products/twowayradios/mototrbo>). Additional questions can be sent to NAGADP@Motorola.com. Please include all relevant contact information.

Where do I download the MOTOTRBO Application Developer Kits (ADKs)?

You must be an Application Developer or an Application Provider for MOTOTRBO in order to download these documents. To become an Application Developer or Application Provider for MOTOTRBO, please see the MOTODEV site for more details (<http://developer.motorola.com/products/twowayradios/mototrbo>).

I have a technical question / problem and need to speak to someone. Who do I contact?

You must be an Application Developer or an Application Provider with a support agreement to receive technical support. Please submit your request on the technical support section of the Motorola Developer Network site: MOTODEV (<http://developer.motorola.com/products/twowayradios/mototrbo>) and it will be routed to the appropriate contact. Please include all relevant contact information.



If I am an Application Developer or an Application Provider for PROIS, does that mean I have a license agreement for MOTOTRBO or vice versa?

No. The license agreement only covers the specific developer interfaces that are licensed to you. To develop for MOTOTRBO, you must have a MOTOTRBO license agreement. Likewise, to develop for PROIS, you must have a PROIS license agreement. These license agreements are only valid for the specific regions of the world for which you are approved.

I would like to develop and test my application with MOTOTRBO radios. How do I proceed to acquire these products?

The Application Developer Program does not offer loaner equipment for testing. Application Developers and Application Providers with a support agreement will have limited access to a test system at Motorola. Additional test equipment required should be purchased from an authorized MOTOTRBO dealer.

Where can I find software tools or development kits to help me develop my application?

Software development kits (SDKs) are not available at this time. Check the MOTODEV (<http://developer.motorola.com/products/twowayradios/mototrbo>) website for news on the future release of SDKs.

Future Roadmap

What are the roll-out plans for the various models, bands, etc?

MOTOTRBO is now available in UHF Range 1 (403-470 MHz) and VHF (136-174 MHz). UHF range 2 (450-512MHz) is expected in mid 2008.

Is remote mount capability available on the XPR™ series mobiles?

This feature is not currently available on the XPR series mobiles. It is on the roadmap and will be added to the platform at a later date.

Is telephone interconnect or DTMF signaling capability available on the MOTOTRBO platform?

Currently the MOTOTRBO platform does not support telephone interconnect or DTMF signaling. This feature is on the roadmap and we anticipate it being available in 2008.

I noticed there was an Ethernet connector on the back of the repeater. What is the purpose of this connector?

This connector was built-in to the repeater to enable future repeater enhancements. Currently, this connector is not enabled on the XPR 8300 repeater. There are plans to enable this connector on the future roadmap. Existing XPR 8300 repeaters in the field at that time will be software upgradeable to enable the Ethernet connector.

What are your plans for a high power (100W) repeater or 100W power amplifier?

Motorola is developing a 100W power amplifier for the MOTOTRBO platform and we anticipate having this available in early 2008.

What are your plans for a digital trunking solution?

Motorola is committed to supporting customers that have invested in our PassPort® and LTR® trunking systems. We are first working on defining a migration strategy to help your customers effectively leverage the existing investments they have made in their trunking systems. Option Board capability for MOTOTRBO subscribers was made available in 4Q07, enabling 3rd party developers to create Passport & LTR solutions.



Does this mean the end of analog system development/offering from Motorola?

Motorola offers an expansive portfolio of two-way communications solutions for a variety of customer segments. We are committed to providing the right technology to address specific customer needs and use.

Motorola will provide analog solutions as long as there are business segments that benefit from these systems, and as long as market drivers and regulatory requirements allow their use.

What are your Multi-Site plans? Will my repeater be upgradeable?

Multi-site is projected to be available in late 2008 and your current MOTOTRBO repeater will be upgradeable.

Technology/Standards/Regulatory Environment

What standard is MOTOTRBO based on?

MOTOTRBO was designed to the globally-recognized European Telecommunications Standards Institute (ETSI) Digital Mobile Radio (DMR-Digital Mobile Radio) tier two standard for professional mobile radio.

This provides an open platform that will enable market acceptance and multi-vendor interoperability for voice and IP data and will assure competitive pricing while protecting customer investment.

Why TDMA and how does TDMA differ from FDMA?

Frequency-division multiple access (FDMA) splits the channel frequency itself into two smaller sub-channels that can carry separate calls side-by-side. By comparison, Time-division multiple access (TDMA) preserves the full channel width, but divides it into alternating time slots that can each carry an individual call.

Motorola believes that two-slot 12.5 kHz TDMA-based systems, providing 6.25 kHz equivalency, are the better choice for most professional radio users.

Wireless standards based on TDMA technology are already widely used around the world, and future requirements for even greater spectral efficiency are expected to be based on TDMA as well.

Today and tomorrow, TDMA technology for narrowband 12.5 KHz (6.25 equivalent-6.25e) professional radio users, provides advantages of feature flexibility, lower equipment costs, longer battery life, future-readiness, and the proven ability to increase spectral efficiency without risking increased congestion or interference.

Are there any health issues with the TDMA technology?

Like all Motorola wireless products, our MOTOTRBO portable and mobile two-way radios are designed and tested to assure that they operate within reliable science-based standards and guidelines for safe exposure to radio waves.

These standards are recognized by scientific bodies, government agencies and health authorities around the world as providing substantial protection to users; they cover a variety of technologies including TDMA.

Numerous evaluations by scientific experts have reached the same conclusion—wireless communications products which operate within recognized guidelines pose no demonstrated health risk.

Is digital audio really better than analog audio?

MOTOTRBO provides better basic communications quality, including:

- Improved audio quality at the edge of coverage.
- Improved background noise suppression with digital voice processing automatically detecting and reducing background noise in the caller's environment.



Is MOTOTRBO compatible with P25 technology/systems?

No. The P25 protocol (TIA Project 25 standard) was adopted for public safety sector use and currently uses 12.5 KHz FDMA technology. MOTOTRBO supports the ETSI Digital Mobile Radio (DMR) standard for professional two-way radio customers and uses 12.5 KHz (6.25 equivalent-6.25e) TDMA technology.

Competition

Who/what are MOTOTRBO's biggest competitors?

Licensed analog two-way radios: While analog two-way radio offers certain advantages that make it the clear choice for the vast majority of mobile professionals, such as the lowest total cost of ownership, customizable coverage and features and a simple and reliable implementation, it has reached the limits of its innovative life.

- Analog two-way radio has limited battery life, degrading voice quality close at the edge of coverage and lacks integrated data applications. Additionally, more and more businesses are experiencing interference and crowding as they reach their licensed spectrum capacity.

Push-to-talk over cellular: While this approach is easy to implement, it requires dependency on public network infrastructure with recurring service usage fees resulting in a high total cost of ownership (TCO) and uncertain coverage, reliability and feature availability.

I have heard Kenwood and ICOM talking about their 6.25 "true" FDMA solution, including benefits over TDMA alternatives. What's the difference? Why is yours going to come out the winner?

While we can't speak to Kenwood/ICOM's offering, Motorola believes that two-slot 12.5 kHz TDMA-based systems providing 6.25 kHz equivalency are the better choice for professional radio users.

Wireless standards based on TDMA technology are already widely used around the world, and future requirements for even greater spectral efficiency are expected to be based on TDMA as well.

Today and tomorrow, TDMA technology, for narrowband 12.5 KHz (6.25 equivalent-6.25e) professional radio users provides advantages of feature flexibility, lower equipment costs, longer battery life, future-readiness, and the proven ability to increase spectral efficiency without risking increased congestion or interference.

In addition to leveraging TDMA technology, MOTOTRBO offers integrated data applications and advanced features.

There was an article in MRT magazine that stated ICOM and Kenwood chose an FDMA solution because it leveraged existing FM radio hardware and also FDMA required no infrastructure to operate. How does the MOTOTRBO platform compete with those claims?

As a dual mode radio—analogue and digital—MOTOTRBO allows scanning between the two modes, allowing businesses to upgrade at their own pace, while leveraging their existing investment.

Also, the article stated that FDMA required no infrastructure to operate. MOTOTRBO TDMA works in both digital talkaround (simplex) and repeater mode. No infrastructure is required when operating MOTOTRBO in simplex mode. Our customers can take advantage of the improved battery life, enhanced call signaling features and data applications in simplex mode. The only benefit not available in simplex mode is the 2 voice paths in a 12.5kHz channel. The repeater is required to manage the "slotting" of the channel.



Training

What training is available for my salespeople?

MOTOTRBO Computer-Based Sales Training Class

- This is 2-3 hour self-guided computer-based training. It is designed for sales reps and sales managers. It gives you a high-level overview of the MOTOTRBO system, key selling points and tips on selling to specific verticals.
- Course Schedule and Registration will be on techtrain.motorola.com later in 2007.

For basic product information, the user guides are also available for download on MOL in the Resource Center. The following user guides are available:

- XPR™ Series Mobile User Guide kit (includes user guides for the XPR 4300—Numeric Display Mobile and XPR 4500 / XPR 4550 Display Mobiles)
- XPR Series Portable User Guide kit (includes user guides for the XPR 4300—Numeric Display Mobile and XPR 4500 / XPR 4550 Display Mobiles)

What training is available for my system and service technicians?

MOTOTRBO System Training Workshop (TBO005)

- This course is an instructor-led, computer-based course (utilizing the web-ex tool). It describes how a MOTOTRBO system operates in sync with its attached components, the application server, repeater, fielded radios and application programs. Helps the technician understand the digital radio technology along with new digital features. It explains system and channel capacity planning while addressing coverage planning considerations. It shows technicians how to set-up install and configure the MOTOTRBO CPS to fulfill fleetmapping requirements.
- Course registration and schedule is currently available on techtrain.motorola.com. This course is run for 5 days for 2 hours per day.

MOTOTRBO System Planner

- This booklet is available on MOTOTRBO Programming Software CD (RVN5115), on MOL in the Resource Center or can be ordered separately (6880309T12). It gives the technician and sales person a detailed overview of how to plan, design and order the MOTOTRBO system. It is a reference document that covers in detail the topics that are reviewed in the System Training workshop.

MOTOTRBO Data Applications Training (TBO004)

- This course is an instructor-led, computer-based course (utilizing the web-ex tool). It describes how to install, configure and operate the MOTOTRBO Location Services and MOTOTRBO Text Messaging Services applications.
- A prerequisite of this course is the MOTOTRBO System Training Workshop (TBO005)
- Course registration and schedule is currently available on techtrain.motorola.com. This course is run for 4 days for 2 hours per day.

Level 2 Service Training

- This course is an instructor-led computer-based course. It describes to Motorola authorized service personnel how to carry out Level 2 Service on MOTOTRBO Professional Digital Two-Way Radio Systems. It gives the technicians an overview of the radio model, lists the MOTOTRBO CPS functions, installation and codeplug configuration. Demonstrates the test mode and demonstrates the subscriber or repeater disassembly and reassembly process. Separate courses are available for the portable, mobile and repeater.



Licensing requirements

My customer is currently operating analog radios on a 25 kHz or 12.5 kHz channel. They would like to purchase new MOTOTRBO radios and operate them in analog mode.

From a licensing perspective, no action is required. MOTOTRBO radios will operate on a 25 kHz or 12.5 kHz analog channel.

My customer is currently operating analog radios on a 25 kHz channel. They would like to purchase new MOTOTRBO radios and operate them in digital mode.

To operate in digital mode, you will need to add the 12.5kHz Emission Designator and the Digital Emission Designator. This Emission Designator will be different if you are transmitting just voice on the channel or just data on the channel. You will need to work with the FCC or Frequency Coordinators to complete this process. You may contact EWA (Enterprise Wireless Alliance) at customerservice@enterprisewireless.org for more assistance in modifying your license.

To operate in digital mode in Canada, you will need to submit a letter to Industry Canada explaining the change and fill out an application with the technical details of the equipment.

My customer is currently operating analog radios on a 12.5 kHz channel. They would like to purchase new MOTOTRBO radios and operate them in digital mode.

You will need to add the Digital Emission Designator. This Emission Designator is different if you are transmitting just voice on the channel or voice and data on the channel. You will need to work with the FCC or Frequency Coordinators to complete this process. You may contact EWA (Enterprise Wireless Alliance) at customerservice@enterprisewireless.org for more assistance in modifying your license.

To operate in digital mode in Canada, you will need to submit a letter to Industry Canada explaining the change and fill out an application with the technical details of the equipment.

The direct links for Industry Canada Licensing are as follows:

Industry Canada local office contact information: <http://strategis.ic.gc.ca/epic/site/smt-gst.nsf/en/sf01742e.html>

Application web site: http://sd.ic.gc.ca/engdoc/help/lm/lm_index.html

Direct link to mobile license application: <http://strategis.ic.gc.ca/epic/site/smt-gst.nsf/en/sf06052e.html>

Direct link to Base/Repeater application: <http://strategis.ic.gc.ca/epic/site/smt-gst.nsf/en/sf06003e.html>

My customer would like to take advantage of TDMA technology and operate 2 voice paths over one repeater channel. Are there any additional licensing requirements to support this operation?

Once you receive the appropriate Emission Designators for a 12.5kHz digital channel, there are no additional licensing requirements to support 2:1 TDMA.

My customer would like to use the Location Services and Text Messaging applications. Are there any additional licensing requirements to support this operation?

You will need to get a Voice and Data Digital Emission Designator. You will need to work with the FCC and Frequency Coordinators to complete this process. You may contact EWA (Enterprise Wireless Alliance) at customerservice@enterprisewireless.org for more assistance in modifying your license.

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Application web site: http://sd.ic.gc.ca/engdoc/help/lm/lm_index.html

Direct link to mobile license application: <http://strategis.ic.gc.ca/epic/site/smt-gst.nsf/en/sf06052e.html>

Direct link to Base/Repeater application: <http://strategis.ic.gc.ca/epic/site/smt-gst.nsf/en/sf06003e.html>